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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PHILIP FRANCIS MIELE

Appeal 2008-5075
Application 10/647,917
Technology Center 1700

Decided: October 29, 2008

Before CHARLES F. WARREN, PETER F. KRATZ, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

KRATZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the
Examiner's final rejection of claims 1-13. We have jurisdiction pursuant to
35 U.S.C. § 6.

Appellant's claimed invention is directed to a fibrous mat including a formaldehyde-containing binder, which binder includes a bisulfite compound that allegedly lowers formaldehyde emissions (Spec. 3-4).

Claim 1 is illustrative and reproduced below:

1. A nonwoven fibrous mat having a basis weight in the range of about 50 - 225 grams/square meter, fibers in the fibrous mat consisting essentially of polymer fibers bound by about 16-30 wt. percent, based on the dry weight of the mat, of a formaldehyde containing polymer resin latex binder, the polymer of the polymer resin latex binder being selected from a group consisting of ethylene-vinyl acetate copolymer, styrene-acrylic copolymer, vinyl-acrylic copolymer, styrene-butadiene-acrylonitrile copolymer, acrylic copolymer prepared by emulsion polymerization of one or more acrylic ester monomers including ethyl acrylate, methyl acrylate, methyl methacrylate, butyl acrylate, 2-ethyl hexylacrylate, hydroxyethyl acrylate, hydroxypropyl acrylate, and hydroxyethyl methacrylate, acrylamide or substituted acrylamides, butadiene, styrene, acrylonitriles, vinyl acetate or other vinyl esters; carboxylic acid monomers or ethylenically unsaturated anhydrides capable of generating carboxylic acids, the binder containing bisulfite compound providing a hot strength in the mat, at 200 degrees C., of no more than about 1 percent elongation, in the machine direction, the binder containing at least about 1.25 wt. percent and up to about 7.5 wt. percent of the bisulfite compound, based on the dry weight of the formaldehyde containing resin in the binder.

The Examiner relies on the following prior art references as evidence in rejecting the appealed claims:

Nishibara	5,178,706	Jan. 12, 1993
Taylor	5,578,371	Nov. 26, 1996
Chang	5,914,365	Jun. 22, 1999
Hummerich	6,071,994	Jun. 6, 2000

Claims 1-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chang in view of Taylor. Additionally, claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Chang in view of Taylor, and Hummerich. Also, claims 8-10 additionally stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chang in view of Taylor, and Nishibara.

We affirm the stated rejections for reasons set forth in the Answer and as further provided below.

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) any secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). “[A]nalysis [of whether the subject matter of a claim is obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741 (2007). *See DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361 (Fed. Cir. 2006) (“The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself.”).

Starting with the first stated rejection, claims 1-13 are argued together as a group. Accordingly, we select claim 1, the sole independent claim on appeal, as the representative claim on which we shall decide this appeal as to the first stated rejection.

The Examiner basically maintains that Chang teaches or suggests a fibrous mat corresponding to the mat required by representative claim 1 including the provision of a formaldehyde-containing binder but for the bisulfite compound additive for the binder (Chang, Abs., col. 2, l. 35-col. 3, l. 15, col. 5, l. 6-col. 6, l. 67; Ans. 3). The Examiner turns to Taylor for disclosing the addition of bisulfite to a formaldehyde-containing binder to lower formaldehyde emissions during the curing of the binder (Taylor, Abs., col. 3, l. 38- col. 4, l. 54; Ans. 4)). The Examiner has determined that “[i]t would have been obvious to one having ordinary skill in the art to have modified the binder composition of Chang to include bisulfite as claimed because Taylor teaches the incorporation reduces total emissions as cited above” (Ans. 4).

Appellant contends that Chang is directed to a different type of fibrous nonwoven mat (a glass fiber mat) and that Taylor’s teachings do not suggest a modification to the fibrous mat binder of Chang that would result in the claimed invention (Br. 9). A Declaration under 37 C.F.R. § 1.132 of Ralph Michael Fay and an excerpt from Fiber Glass by Mohr et al. (Mohr) are provided in support of Appellant’s contentions.

Hence, a principal issue before us is: Has Appellant established reversible error in the Examiner’s obviousness rejection of representative claim 1 by the assertions that Chang is directed to a different type of mat (a glass fiber mat) that would not result in the claimed fibrous mat, which includes fibers consisting essentially of polymer fibers, upon any modification thereof suggested by Taylor? We answer this question in the negative. Thus, we affirm the Examiner’s obviousness rejection of claims 1-

13 over Chang in view of Taylor for reasons set forth in the Answer and below.

Chang describes the use of organic polymer fibers as an alternative to the otherwise disclosed inorganic (glass) fiber option for forming the mat described therein, as pointed out by the Examiner (Chang, col. 6, ll. 55-67; Ans. 3). Moreover, Chang teaches that a resin based aqueous binder comprising a urea-formaldehyde resin and a styrene-maleic anhydride copolymer (SMA) can be employed in forming a fiber mat useful as flooring or roofing material (col. 2, ll. 48-59).

Appellant has not established that the acrylic copolymer option for the binder as called for by the product-by-process limitations of claim 1 requires a patentably different binder than the binder taught and suggested by Chang based on the argument that their claimed formaldehyde containing polymer would be recognized as being thermoplastic (Br. 9). In this regard, representative claim 1 does not require the exclusion of thermosetting formaldehydes from the claimed binder given the “formaldehyde containing polymer latex resin” limitation of claim 1. Also, Chang teaches that the fiber mat usually includes about 15-30 weight percent binder on a dry weight basis, which disclosed binder content substantially overlaps the 16-30 weight percent binder weight for the mat as required by representative claim 1 (Chang, col. 6, ll. 45-54).

On this record, the applied Chang reference furnishes sufficient teachings to render the product-by process defined binder polymer and hot strength functionality specified in representative claim 1 at least *prima facie* obvious. After all, whether a rejection is under 35 U.S.C. § 102 or § 103, when Appellant’s product and that of the prior art appear to be identical or

substantially identical, the burden shifts to Appellant to provide evidence that the products taught by the prior art do not necessarily or inherently possess the relied upon characteristics of Appellant's claimed product. *See In re Fitzgerald*, 619 F.2d 67, 70 (CCPA 1980); *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977); *In re Fessmann*, 489 F.2d 742, 745 (CCPA 1974). The reason is that the Patent and Trademark Office is not able to manufacture and compare products. *See Best*, 562 F.2d at 1255.

Additionally, it is significant that Appellant acknowledges that polymer fibrous mats employing formaldehyde containing acrylic latex polymer binders that provide dimensional stability for roofing products were known in the art albeit subject to emitting formaldehyde vapors during heating and curing steps encountered during manufacture (Spec. 1).¹

As for the representative claim 1 requirement for a bisulfite additive being present in the formaldehyde containing resin binder, Taylor discloses the provision of such a binder additive for decreasing formaldehyde emissions during the curing of formaldehyde containing binder resin. In this regard, we agree with the Examiner that one of ordinary skill in the art would have been led to furnish such a formaldehyde scavenger to the formaldehyde-containing binder of Chang to reduce emissions of

¹ See *In re Nomiya*, 509 F.2d 566, 570-71 (CCPA 1975) (The admitted prior art in the applicant's specification may be used in determining the patentability of a claimed invention.). Also, see *In re Fout*, 675 F.2d 297, 301 (CCPA 1982), “[i]t is not unfair or contrary to the policy of the patent system that appellants' invention be judged on obviousness against their actual contribution to the art” (footnote omitted).

formaldehyde during the curing of the binder of Chang as taught by Taylor to be an expected benefit of providing such a binder additive.²

In light of the above, Appellant has not established that the representative claim 1 mat patentably differs from the mat suggested by the combined teachings of Chang and Taylor. In this regard, the Fay Declaration addresses the teachings of Taylor and concludes that Appellant's mat is different from the mat of Taylor. However, the Examiner's rejection is not over Taylor alone; but, Chang taken with Taylor. Moreover, the excerpt from Mohr's book is likewise unpersuasive as Chang teaches organic polymer fiber mats. For reasons stated above and in the Answer, Appellant's have not fairly substantiated their argument that the teachings of Taylor would not have suggested a modification of Chang that would have led one of ordinary skill in the art to the representative claim 1 subject matter.

On this record, we affirm the Examiner's first stated obviousness rejection.

Concerning the Examiner's second and third obviousness rejections, we note that these rejections each include Chang and Taylor, as discussed above, and an additional reference being applied against dependent claim 2 and dependent claims 8-10, respectively.

With respect to the separate obviousness rejection of dependent claim 2, we note that Chang and Taylor suffice to render the subject matter of claim 2 *prima facie* obvious to one of ordinary skill in the art for the reasons

² It is instructive to note that Examples 2 and 3, as set forth in the Specification, demonstrate that bisulfite addition has little or no effect on the hot strength of a mat.

already stated above; that is, Chang reasonably suggests use of a formaldehyde fortified acrylic copolymer binder and Taylor suggests a bisulfite compound addition to reduce formaldehyde emissions during curing. Hummerich further discloses the use of acrylic copolymer materials in binder compositions as pointed out by the Examiner (Ans. 4-5) and Hummerich teaches that formaldehyde can optionally be used to fortify the binder (col. 10, ll. 8-12). Thus, Appellant's arguments against the additionally applied Hummerich as being directed to a formaldehyde free binder are not persuasive of reversible error in the Examiner's separate obviousness rejection of claim 2.

With regard to the separate obviousness rejection of dependent claims 8-10, Appellant furnishes additional arguments attacking the Examiner's use of Nishibara in addition to Chang and Taylor in the separate rejection of these dependent claims (Br. 12-14). Representative claim 8 depends from claim 1, discussed above, and further requires that that the binder includes emulsified styrene butadiene acrylonitrile copolymer latex. Appellant identifies such a binder resin polymer as being a known commercially available mat binder (Spec. 6, Example 1). As such, Appellant's argument with respect to the additionally applied Nishibara reference is not persuasive of reversible error in the Examiner's obviousness position of representative claim 8 in that Nishibara is at best cumulative to the prior art respecting known binder materials that are acknowledged by Appellant to be readily available to one of ordinary skill of the art. Again, it is significant to note that Appellant acknowledges that the alleged invention at issue here is drawn to the addition of bisulfite compound to the mat binder (Spec. 3-4, Example 3), and not in the many known processes for forming the mat using known

aqueous latex binder without the bisulfite compound (Compare Examples 1 and 2 with Example 3, Spec. 6-7).

It follows that, on this record, we shall affirm all of the Examiner's obviousness rejections.

CONCLUSION

The Examiner's decision to reject claims 1-13 under 35 U.S.C. § 103(a) as being unpatentable over Chang in view of Taylor; to reject claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Chang in view of Taylor, and Hummerich; and to reject claims 8-10 under 35 U.S.C. § 103(a) as being unpatentable over Chang in view of Taylor, and Nishibara is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

tf/ls

ROBERT D. TOUSLEE
JOHNS MANVILLE
LEGAL DEPARTMET
10100 WEST UTE AVENUE
LITTLETON, CO 80127